

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**

8/7/1
DIALOG(R) File 352:Derwent WPI
(c) 2003 Thomson Derwent. All rts. reserv.

010438377

WPI Acc No: 1995-339694/199544

Composite non-woven fabric for leak preventive sheets, diapers, etc - is composed of non-woven fabric with laminated sheet having embossed pattern and has improved flexibility

Patent Assignee: NIPPON VILENE KK (NIVL)

Number of Countries: 001 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 7232409	A	19950906	JP 9450017	A	19940224	199544 B
JP 3353995	B2	20021209	JP 9450017	A	19940224	200301

Priority Applications (No Type Date): JP 9450017 A 19940224

Patent Details:

Patent No	Kind	Ln	Pg	Main IPC	Filing Notes
-----------	------	----	----	----------	--------------

JP 7232409	A	4	B32B-027/12		
------------	---	---	-------------	--	--

JP 3353995	B2	4	B32B-027/12	Previous Publ. patent JP 7232409	
------------	----	---	-------------	----------------------------------	--

Abstract (Basic): JP 7232409 A

A composite non-woven fabric is composed of a non-woven fabric and a sheet. The sheet has an embossed pattern.] Also claimed are: (a) the prodn. of the composite non-woven fabric, where a sheet is laminated onto a stretchable non-woven fabric while tension is applied to the fabric and where an emboss pattern is formed on the sheet; (b) the prodn. of the composite non-woven fabric, where a latent crimping property non-woven fabric is heat treated to be crimped, tension is applied to the non-woven fabric and a sheet is laminated onto the fabric and an emboss pattern is formed on the sheet; and (c) a prodn. where a sheet is laminated to a latent crimping property non-woven fabric, and heated to be crimped whereby an emboss pattern is formed on the sheet.

USE - The composite non-woven fabric is useful for leak-preventive sheets, diapers, diaper covers, surgical clothings, rain coats etc.

ADVANTAGE - The non-woven fabric has improved flexibility, good hand, mat effect, and slight stretchability.

Dwg. 0/0

Derwent Class: A96; D22; F04; P32; P73

International Patent Class (Main): B32B-027/12

International Patent Class (Additional): A61F-013/66; B32B-015/14;

D04H-001/06; D06C-023/04

8/7/2
DIALOG(R) File 352:Derwent WPI
(c) 2003 Thomson Derwent. All rts. reserv.

008312013

WPI Acc No: 1990-199014/199026

Nonwoven sheet prodn. for panels of cars - by applying high pressure columnar flow to laminate of shrinkable and nonshrinkable fibre web

Patent Assignee: MIYAZAKI T (MIYA-I)

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 2133641	A	19900622	JP 88286118	A	19881112	199026 B

Priority Applications (No Type Date): JP 88286118 A 19881112

Abstract (Basic): JP 2133641 A

Nonwoven sheet prodn. comprises applying a high pressure columnar flow to a laminate of a shrinkable fibre web and nonshrinkable fibre web. to unify the webs, and forming a nonshrinkable film on the

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 07-232409

(43)Date of publication of application : 05.09.1995

(51)Int.Cl.

B32B 27/12

A61F 13/66

D04H 1/06

D06C 23/04

// B32B 15/14

(21)Application number : 06-050017

(71)Applicant : JAPAN VILENE CO LTD

(22)Date of filing : 24.02.1994

(72)Inventor : OZAKI KAZUNORI

(54) COMPOSITE NONWOVEN FABRIC AND MANUFACTURE THEREOF

(57)Abstract:

PURPOSE: To obtain a composite nonwoven fabric having flexibility, a good feeling, matte effect and slight stretchability by using a nonwoven fabric and a sheet having embossed patterns.

CONSTITUTION: As a nonwoven fabric, especially, a stretchable nonwoven fabric, there is a nonwoven fabric formed from a highly crimpable fiber, a nonwoven fabric prepared by heat-treating a latent crimpable nonwoven fabric formed from a latent crimpable fiber to develop crimpiness or a nonwoven fabric composed of an elastic fiber. As a sheet, a synthetic resin film with a thickness of 10- μ m or less and a wt. basis of 0.5-25g/m² and/or metal foil is used. For example, the sheet is laminated to the stretchable nonwoven fabric while tension is applied to the nonwoven fabric or the sheet is laminated to the latent crimpable nonwoven fabric and the formed laminate is heat-treated to develop crimpiness to obtain a flexible composite sheet having embossed patterns on the surface of the sheet.

LEGAL STATUS

[Date of request for examination] 29.08.2000

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number] 3353995

[Date of registration] 27.09.2002

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

CLAIMS DETAILED DESCRIPTION TECHNICAL FIELD PRIOR ART EFFECT OF THE INVENTION
TECHNICAL PROBLEM MEANS EXAMPLE

[Translation done.]

*** NOTICES ***

Japan Patent Office is not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

CLAIMS

[Claim(s)]

[Claim 1] The compound nonwoven fabric characterized by consisting of a nonwoven fabric and a sheet and a sheet having a crimp pattern.

[Claim 2] The compound nonwoven fabric according to claim 1 characterized by a nonwoven fabric being an elasticity nonwoven fabric.

[Claim 3] The compound nonwoven fabric according to claim 1 characterized by the thickness of a sheet being 10 micrometers or less.

[Claim 4] The compound nonwoven fabric according to claim 1 characterized by the eyes of a sheet being 0.5 - 25 g/m².

[Claim 5] The compound nonwoven fabric according to claim 1 characterized by sheets being a synthetic-resin film and/or a metallic foil.

[Claim 6] The compound nonwoven fabric according to claim 1 characterized by both sides of a nonwoven fabric being sheets.

[Claim 7] The compound nonwoven fabric according to claim 1 characterized by one [at least] nonwoven fabric of both sides of a sheet being an elasticity nonwoven fabric.

[Claim 8] The manufacture method of the compound nonwoven fabric characterized by laminating a sheet, applying a tension to an elasticity nonwoven fabric, and forming a crimp pattern in a sheet.

[Claim 9] The manufacture method of the compound nonwoven fabric characterized by laminating a sheet, applying a tension after heat-treating a potential crimp nature nonwoven fabric and making a crimp discover, and forming a crimp pattern in a sheet.

[Claim 10] The manufacture method of the compound nonwoven fabric characterized by laminating a sheet in a potential crimp nature nonwoven fabric, heat-treating subsequently, making a crimp discover, and forming a crimp pattern in a sheet.

[Translation done.]

* NOTICES *

Japan Patent Office is not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application] This application invention relates to the compound nonwoven fabric which carried out the laminating of the sheet to the nonwoven fabric, especially the elasticity nonwoven fabric, and its manufacture method.

[0002]

[Description of the Prior Art] Conventionally, since the layered product of a nonwoven fabric and a sheet was laminated by thermocompression bonding and the laminating of the sheet was carried out in the smooth state, the hand was obtained only for the stiff thing. Therefore, for example, as a base fabric of a pasting agent, it was what it is hard to stick to the skin.

[0003]

[Problem(s) to be Solved by the Invention] This application invention aims at obtaining the flexible compound nonwoven fabric which carried out the laminating of a nonwoven fabric especially an elasticity nonwoven fabric, and the sheet.

[0004]

[Means for Solving the Problem] This application invention is the flexible compound nonwoven fabric which carried out the laminating of the sheet which has a crimp pattern to the nonwoven fabric, especially the elasticity nonwoven fabric, and its manufacture method.

[0005] After this application invention laminates a sheet or laminates a sheet in a potential crimp nature nonwoven fabric, applying a tension for example, to an elasticity nonwoven fabric, it can manufacture the flexible compound nonwoven fabric which has a crimp pattern in a sheet side by heat-treating and discovering a crimp.

[0006] The nonwoven fabric, especially elasticity nonwoven fabric of this application invention are a nonwoven fabric which consists the nonwoven fabric produced from the crimp nature fiber which has the high crimp of the 20% or more of the degrees of crimp, or the potential crimp nature nonwoven fabric produced from potential crimp nature fiber of a nonwoven fabric which actualized the crimp, or an elastic fiber with heat treatment etc. Although what has a high crimp is desirable as for crimp nature fiber, the potential crimp nature fiber which generates the crimp of the shape of the small shape of a loop and a spiral is more suitable for this application invention. What the assembling-die bicomponent fiber of a resin of a different kind, for example, the assembling-die bicomponent fiber of the polyester resin of two components from which a thermal-contraction property differs etc., is used as potential crimp nature fiber, and discovers a loop-like crimp with heat treatment is desirable. Since it produces from such potential crimp nature fiber and a finer crimp pattern is acquired, a potential crimp nature nonwoven fabric is desirable. The fiber of an elastic fiber which consists of elastomers, such as polyurethane and a polybutylene terephthalate, is desirable. Although 100% of rates of a compounding ratio, such as these crimp nature fiber, are desirable in respect of elasticity, you may mix them with usual fiber if needed.

[0007] although, as for a sheet, a synthetic-resin film, a metallic foil, etc. are used on the other hand -- as a synthetic-resin film -- films, such as polyester, a polyamide, polyethylene, polypropylene, and a polyvinylidene chloride, -- moreover, especially the polyester film or the aluminum NIUMU foil that aluminum NIUMU, copper, etc. can use it by the monostromatic or the multilayer, and there is chemical resistance as a metallic foil, and does not contract at all in the usual heat treatment, or is hard to contract is desirable A

thing 10 micrometers or less is desirable, if it is 0.5–6 micrometers, a fine crimp pattern will be acquired, the thickness of a sheet is flexible, an exterior's is good and especially its 1–4 micrometers are desirable. Since the crimp pattern that 0.5 – 25 g/m² is fine is acquired, the eyes of a sheet are desirable. Its thing of impermeability or moisture permeability etc. is desirable, and although not limited especially, since a sheet can do a crimp with the finer one where elasticity is smaller, it is desirable. As for the nonwoven fabric and/or the sheet, electric conduction processing etc. may be given by coating, vacuum evaporation, etc. [0008] The laminating of a nonwoven fabric and a sheet can perform an application, a spray, spraying, etc. on a nonwoven fabric or a sheet, and can join adhesives to it, or can perform them by the usual means, such as a lamination by the heat weld nature film and the melting extrusion film. As adhesives, the adhesives which consist of resins, such as acrylic, an epoxy system, a polyurethane system, and a polyolefine system, are used.

[0009] If the sheet which applied adhesives is laminated, or in the case of the nonwoven fabric which is already elastic thermoplastics is fused, it extrudes in the shape of a film and it laminates in it, applying 1 – 10% of tension to this elasticity nonwoven fabric, a desired crimp pattern can be formed in a film plane.

[0010] Moreover, since fiber discovers a crimp by usually heat-treating at 100–210 degrees C in the case of a potential crimp nature nonwoven fabric, if heat treatment is carried out after laminating a sheet by the usual means in a potential crimp nature nonwoven fabric, a desired crimp pattern can be formed in a sheet side. in addition, both sides of a nonwoven fabric -- a sheet -- or curl etc. can also be prevented if a nonwoven fabric is laminated to both sides of a sheet

[0011] If the sheet side of a crimp pattern is used for the compound nonwoven fabric of this application invention as a front face, it is flexible, and since a front face is lusterless with little gloss, it is suitable for a surgical gown, a raincoat, etc. As a pasting agent, if a sheet side is used as a front face, it is flexible, and since gloss is not conspicuous, it is desirable. Moreover, in the case of impermeability or moisture permeability, a sheet is suitable for garments, such as a **** sheet, a diaper, a diaper cover, a surgical gown, and a raincoat. Moreover, if a sheet is made into an interlayer and both front faces are constituted from a nonwoven fabric, it is suitable for the good sheet of the touch, garments, etc.

[0012]

[Example] An example explains this application invention concretely below.

After having carried out carding of 12 deniers of examples, and the 51mm potential crimp nature polyester fiber, carrying out stream interlacement and producing the potential crimp nature nonwoven fabric of eyes 20 g/m², heat-treated for 30 seconds at 180 degrees C, the crimp was made to discover in the shape of a loop, and 40g of eyes/and the elasticity nonwoven fabric of m² were produced. On polyester film with a thickness of 2 micrometers, the polyurethane system resin which dissolved in the ethyl-acetate solvent as adhesives was applied two times 2 g/m by the solid content, and the solvent was removed mostly. Next, applying 3% of tension to the longitudinal direction of the aforementioned elasticity nonwoven fabric, the aforementioned film was laminated and the compound nonwoven fabric of unified eyes 45 g/m² was obtained. This compound nonwoven fabric was a flexible thing which has a fine crimp pattern in a film plane.

[0013] Carding of 22 deniers of examples, 80% of 51mm potential crimp nature polyester fibers, and the 20% (2 deniers and 51mm) (the 14% of the degrees of Dacron [by Toray Industries, Inc.] T-201; crimp) of the usual polyester fibers was carried out, stream interlacement was carried out and the usual potential crimp nature nonwoven fabric of eyes 20 g/m² was produced. After applying the polyurethane system adhesives which dissolved in the ethyl-acetate solvent as adhesives at a rate of solid-content 2 g/m² on polyester film with a thickness of 2 micrometers and removing a solvent mostly, laminated the aforementioned potential crimp nature nonwoven fabric, heat-treated for 30 seconds at 170 more degrees C, the loop-like crimp was made to discover, and the compound nonwoven fabric of eyes 26 g/m² contracted 3% to the longitudinal direction was produced. This compound nonwoven fabric was what has a fine crimp pattern in a film plane, is flexible and has elasticity.

[0014] 27g of eyes which the compound nonwoven fabric produced in the example 3 example 2 was heat-treated [eyes] for 30 seconds at 190 more degrees C, and made the longitudinal direction contract it 6% on the whole/, and the compound nonwoven fabric of m² were flexible things which have a crimp pattern still finer than an example 2.

[0015] Having carried out carding of 43 deniers of examples, and the 51mm high crimp polyester fiber (the 23% of the degrees of Dacron [by Toray Industries, Inc.] T-12; crimp), and applying 2% of tension to the

longitudinal direction of the elasticity nonwoven fabric of eyes 40 g/m² which carried out stream interlacement, polyester film with a thickness of 5 micrometers which applied adhesives like the example 1 was laminated, and the compound nonwoven fabric was obtained. This compound nonwoven fabric was a flexible thing which has a fine crimp pattern in a film plane.

[0016] The potential crimp nature span bond nonwoven fabric of eyes 20 g/m² which carried out melt spinning of polypropylene / the denaturation polypropylene to the letter of junction using the nozzle for example 5 assembling-die bicomponent-fiber manufacture, and was accumulated on the conveyer was heat-treated for 30 seconds at 130 degrees C, and the elasticity nonwoven fabric of eyes 50 g/m² was obtained. Applying 2% of tension to the longitudinal direction of this elasticity nonwoven fabric, like the example 1, it laminated with polyester film with a thickness of 2 micrometers, and 55g of eyes/and the compound-die nonwoven fabric of m2 were obtained. This was a flexible thing which has a crimp pattern in a film plane.

[0017] After having carried out carding of 64 deniers of examples, and the 51mm potential crimp nature polyester fiber, carrying out stream interlacement and producing the potential crimp nature nonwoven fabric of eyes 50 g/m², heat-treated for 30 seconds at 180 degrees C, the crimp was made to discover in the shape of a loop, and 100g of eyes/and the elasticity nonwoven fabric of m2 were produced. On the aluminum NIUMU foil with a thickness of 6 micrometers, the polyurethane system resin which dissolved in the ethyl-acetate solvent as adhesives was applied two times 2 g/m by the solid content, and the solvent was removed mostly. Next, applying 3% of tension to the longitudinal direction of the aforementioned elasticity nonwoven fabric, the aforementioned aluminum NIUMU foil was laminated and the compound nonwoven fabric of unified eyes 118 g/m² was obtained. This compound nonwoven fabric had the fine crimp pattern in aluminum NIUMU ****, was flexible, and when it twisted around the body, in order that it might not miss temperature, it was suitable as a heat insulating material for emergencies.

[0018] After having carried out carding of 74 deniers of examples, and the 51mm potential crimp nature polyester fiber, carrying out stream interlacement and producing the potential crimp nature nonwoven fabric of eyes 50 g/m², heat-treated for 30 seconds at 180 degrees C, the crimp was made to discover in the shape of a loop, and 100g of eyes/and the elasticity nonwoven fabric of m2 were produced. On the polyester film with a thickness of 2 micrometers which deposited 300A aluminum NIUMU, 2g /of polyurethane system resins which dissolved in the ethyl-acetate solvent as adhesives was applied two times m by the solid content, and the solvent was removed mostly. Next, applying 3% of tension to the longitudinal direction of the aforementioned elasticity nonwoven fabric, the aforementioned aluminum NIUMU vacuum evaporationo film was laminated, and the compound nonwoven fabric of unified eyes 105 g/m² was obtained. This compound nonwoven fabric had the fine crimp pattern in the aluminum NIUMU vacuum evaporationo side, was flexible, and when it twisted around the body, in order that it might not miss temperature, it was suitable as a heat insulating material for emergencies.

[0019] After having carried out carding of 82 deniers of examples, and the 51mm potential crimp nature polyester fiber, carrying out stream interlacement and producing the potential crimp nature nonwoven fabric of eyes 20 g/m², heat-treated for 30 seconds at 180 degrees C, the crimp was made to discover in the shape of a loop, and 40g of eyes/and the elasticity nonwoven fabric of m2 were produced. Two polyester film with a thickness of 2 micrometers was prepared separately, 2g /of polyurethane system resins which dissolved in the ethyl-acetate solvent as adhesives was respectively applied two times m by the solid content on each film, and the solvent was removed mostly. Next, applying 3% of tension to the longitudinal direction of the aforementioned elasticity nonwoven fabric, the aforementioned film was laminated from both sides and the compound nonwoven fabric of unified eyes 50 g/m² was obtained. It had the fine crimp pattern and was impermeability, and this compound nonwoven fabric was flexible to both sides, and suitable for them as a surgical gown.

[0020] After having carried out carding of 91.5 deniers of examples, and the 51mm potential crimp nature polyester fiber, carrying out stream interlacement and producing the potential crimp nature nonwoven fabric of eyes 15 g/m², heat-treated for 30 seconds at 130 degrees C, the crimp was made to discover in the shape of a loop, and 30g of eyes/and the elasticity nonwoven fabric of m2 were produced. The polyurethane system resin which dissolved in the ethyl-acetate solvent as adhesives was respectively applied to both sides of polyester film with a thickness of 2 micrometers two times 2 g/m by the solid content, and the solvent was removed mostly. Next, the compound nonwoven fabric of eyes 67 g/m² which laminated to both sides of the aforementioned film and was united with them was obtained, applying 3% of tension for the

aforementioned elasticity nonwoven fabric of two sheets respectively at a longitudinal direction. It was flexible, and this compound nonwoven fabric prevented vaporization of an effect-of-a-medicine component, and was suitable as a pasting medicine base fabric.

[0021] It replaced with the potential crimp nature fiber in example of comparison 1 example 1, and carding of the 100% (2 deniers and 51mm) (the 14% of the degrees of Dacron [by Toray Industries, Inc.] T-201; crimp) of the usual polyester fibers was carried out, stream interlacement was carried out and the nonwoven fabric of eyes 40 g/m² was produced. The polyurethane system resin which dissolved in the ethyl-acetate solvent as adhesives was applied two times 2 g/m by the solid content on polyester film with a thickness of 2 micrometers like the example 1, and the solvent was removed mostly. Next, this film was laminated in the aforementioned nonwoven fabric, and the compound nonwoven fabric of unified eyes 45 g/m² was obtained. This compound nonwoven fabric was what does not have a crimp pattern and is inferior to flexibility.

[0022]

[Effect of the Invention] Since the compound nonwoven fabric of this application invention has a crimp pattern, it is supple, its feeling is good, it has a lusterless effect, and has elasticity etc. slightly.

[Translation done.]

(19) 日本国特許庁 (J P)

(12) 公 開 特 許 公 報 (A)

(11) 特許出願公開番号

特開平7-232409

(43) 公開日 平成7年(1985)9月5日

(51) Int. Cl. ⁴	識別記号	庁内整理番号	F I	技術表示箇所
B 3 2 B 27/12		8413-4 F		
A 6 1 F 13/86				
D 0 4 H 1/06	Z			
D 0 6 C 23/04				
			A 4 1 B 13/08	H
			審査請求 未請求 請求項の数10 F D (全 4 頁) 最終頁に続く	

(21) 出願番号 特願平6-50017

(22) 出願日 平成6年(1994)2月24日

(71) 出願人 000229542

日本バイリーン株式会社

東京都千代田区外神田2丁目14番5号

(72) 発明者 尾崎 和則

茨城県猿島郡総和町大字北利根7番地 日

本バイリーン株式会社内

(74) 代理人 弁理士 熊田 和生

(54) 【発明の名称】 複合不織布及びその製造方法

(57) 【要約】

【目的】 この出願発明は、手術衣、レインコート、貼付剤、おむつかバー、おむつ等を使用するシボ模様を有する柔軟な複合不織布を提供することを目的とする。

【構成】 この出願発明は、不織布とくに伸縮性不織布とシートとからなり、シートがシボ模様を有する複合不織布及びその製造方法に関する。

ことができる。

【0010】また、潜在捲縮性不織布の場合には通常、100～210℃で熱処理することにより繊維が捲縮を発現するので、潜在捲縮性不織布にシートを通常的手段によりラミネートした後、熱処理をすれば、シート面に所望のシボ模様を形成することができる。なお、不織布の両面にシートを、又はシートの両面に不織布をラミネートすれば、カール等を防止することもできる。

【0011】この出願発明の複合不織布は、シボ模様のシート面を表面として使用すると、柔軟で表面が光沢の少ない、艶消し状態となるので、手術衣、レインコート等に好適である。貼付剤としては、シート面を表面とすれば、柔軟で光沢が目立たないので好ましい。また、シートが不透水性か、あるいは透湿性の場合には、防漏シート、おむつ、おむつカバー、手術衣、レインコートなどの衣料に好適である。また、シートを中間層にし、両表面を不織布で構成すれば、肌触りのよいシート、衣料などに好適である。

【0012】

【実施例】つぎに実施例によりこの出願発明を具体的に説明する。

実施例1

2デニール、51mmの潜在捲縮性ポリエステル繊維をカーディングし、水流絡合して目付20g/m²の潜在捲縮性不織布を作製した後、180℃で30秒間熱処理してループ状に捲縮を発現させ、目付40g/m²の伸縮性不織布を作製した。厚さ2μmのポリエステルフィルム上に、接着剤として酢酸エチル溶媒に溶解したポリウレタン系樹脂を固形分で2g/m²塗布し、溶媒をほぼ除去した。次に、前記の伸縮性不織布の長手方向に3%のテンションをかけながら、前記のフィルムをラミネートして、一体化した目付45g/m²の複合不織布を得た。この複合不織布はフィルム面に細かいシボ模様を有する柔軟なものであった。

【0013】実施例2

2デニール、51mmの潜在捲縮性ポリエステル繊維80%と、2デニール、51mmの通常のポリエステル繊維（東レ（株）製テトロンT-201；捲縮度14%）20%とをカーディングし、水流絡合して目付20g/m²の通常の潜在捲縮性不織布を作製した。厚さ2μmのポリエステルフィルム上に、接着剤として酢酸エチル溶媒に溶解したポリウレタン系接着剤を固形分2g/m²の割合で塗布し、溶媒をほぼ除去した後、前記潜在捲縮性不織布をラミネートし、更に170℃で30秒間熱処理して、ループ状捲縮を発現させて、長手方向に3%収縮した、目付26g/m²の複合不織布を作製した。この複合不織布は、フィルム面に細かいシボ模様を有し、柔軟で、伸縮性を有するものであった。

【0014】実施例3

実施例2で作製した複合不織布を、更に190℃で30

秒間熱処理して全体で長手方向に6%収縮させた目付27g/m²の複合不織布は、実施例2よりさらに細かいシボ模様を有する柔軟なものであった。

【0015】実施例4

3デニール、51mmの高捲縮ポリエステル繊維（東レ（株）製テトロンT-12；捲縮度23%）をカーディングし、水流絡合した目付40g/m²の伸縮性不織布の長手方向に2%のテンションをかけながら、実施例1と同様に接着剤を塗布した厚さ5μmのポリエステルフィルムをラミネートして複合不織布を得た。この複合不織布はフィルム面に細かいシボ模様を有する柔軟なものであった。

【0016】実施例5

接合型複合繊維製造用ノズルを用いてポリプロピレン/変性ポリプロピレンを接合状に溶融紡糸してコンベア上に集積した目付20g/m²の潜在捲縮性スパンボンド不織布を130℃で30秒間熱処理して目付50g/m²の伸縮性不織布を得た。この伸縮性不織布の長手方向に2%のテンションをかけながら、実施例1と同様に、厚さ2μmのポリエステルフィルムとラミネートして、目付55g/m²の複合型不織布を得た。これはフィルム面にシボ模様を有する柔軟なものであった。

【0017】実施例6

4デニール、51mmの潜在捲縮性ポリエステル繊維をカーディングし、水流絡合して目付50g/m²の潜在捲縮性不織布を作製した後、180℃で30秒間熱処理してループ状に捲縮を発現させ、目付100g/m²の伸縮性不織布を作製した。厚さ6μmのアルミニウム箔上に、接着剤として酢酸エチル溶媒に溶解したポリウレタン系樹脂を固形分で2g/m²塗布し、溶媒をほぼ除去した。次に、前記の伸縮性不織布の長手方向に3%のテンションをかけながら、前記のアルミニウム箔をラミネートして、一体化した目付118g/m²の複合不織布を得た。この複合不織布はアルミニウム箔面に細かいシボ模様を有し、柔軟で、身体に巻き付けたとき体温を逃さないため、救急用保温材として好適であった。

【0018】実施例7

4デニール、51mmの潜在捲縮性ポリエステル繊維をカーディングし、水流絡合して目付50g/m²の潜在捲縮性不織布を作製した後、180℃で30秒間熱処理してループ状に捲縮を発現させ、目付100g/m²の伸縮性不織布を作製した。300オングストロームのアルミニウムを蒸着した厚さ2μmのポリエステルフィルム上に、接着剤として酢酸エチル溶媒に溶解したポリウレタン系樹脂を固形分で2g/m²塗布し、溶媒をほぼ除去した。次に、前記の伸縮性不織布の長手方向に3%のテンションをかけながら、前記のアルミニウム蒸着フィルムをラミネートして、一体化した目付105g/m²の複合不織布を得た。この複合不織布はアルミニウム蒸着面に細かいシボ模様を有し、柔軟で、身体に巻き

付けたとき体温を逃さないため、救急用保温材として好適であった。

【0019】実施例8

2デニール、51mmの潜在捲縮性ポリエステル繊維をカーディングし、水流絡合して目付20g/m²の潜在捲縮性不織布を作製した後、180℃で30秒間熱処理してループ状に捲縮を発現させ、目付40g/m²の伸縮性不織布を作製した。厚さ2μmのポリエステルフィルム2枚を別々に準備し、それぞれのフィルム上に接着剤として酢酸エチル溶媒に溶解したポリウレタン系樹脂を固形分で各々2g/m²塗布し、溶媒をほぼ除去した。次に、前記の伸縮性不織布の長手方向に3%のテンションをかけながら、前記のフィルムを両面からラミネートして、一体化した目付50g/m²の複合不織布を得た。この複合不織布は両面に細かいシボ模様を有し、不透水性で、柔軟であり、手術衣として好適であった。

【0020】実施例9

1、5デニール、51mmの潜在捲縮性ポリエステル繊維をカーディングし、水流絡合して目付15g/m²の潜在捲縮性不織布を作製した後、130℃で30秒間熱処理してループ状に捲縮を発現させ、目付30g/m²の伸縮性不織布を作製した。厚さ2μmのポリエステルフィルムの両面に、接着剤として酢酸エチル溶媒に溶解*

したポリウレタン系樹脂を固形分で各々2g/m²塗布し、溶媒をほぼ除去した。次に、前記の2枚の伸縮性不織布を、各々長手方向に3%のテンションをかけながら、前記のフィルムの両面にラミネートして、一体化した目付67g/m²の複合不織布を得た。この複合不織布は、柔軟で、薬効成分の揮散を防ぎ、貼付薬基布として好適であった。

【0021】比較例1

実施例1における潜在捲縮性繊維に代えて、2デニール、51mmの通常のポリエステル繊維（東レ（株）製 テトロンT-201；捲縮度14%）100%をカーディングし、水流絡合して目付40g/m²の不織布を作製した。実施例1と同様に、厚さ2μmのポリエステルフィルム上に、接着剤として酢酸エチル溶媒に溶解したポリウレタン系樹脂を固形分で2g/m²塗布し、溶媒をほぼ除去した。次に、このフィルムを前記の不織布にラミネートして、一体化した目付45g/m²の複合不織布を得た。この複合不織布はシボ模様がなく、柔軟性に劣るものであった。

【0022】

【発明の効果】この出願発明の複合不織布は、シボ模様があるので、柔軟性があり、風合いがよく、蹠消効果があり、わずかに伸縮性等を有している。

フロントページの続き

(51)Int.C1.⁶

識別記号

庁内整理番号

F I

技術表示箇所

// B 3 2 B 15/14